THAT WHICH IS CLAIMED IS:

1. A multimode wavelength division multiplexing (WDM) network transceiver comprising:

a plurality of optical transmitters transmitting optical communications signals along respective signal paths;

a multiplexer operatively connected to each optical transmitter for receiving the optical communications signals and multiplexing the optical communications signals into a multimode wavelength division multiplexed optical communications signal having a wavelength channel spacing less than about 1,000 gigahertz;

a demultiplexer for receiving a multimode wavelength division multiplexed optical communications signal and demultiplexing the signal into a plurality of demultiplexed optical communications signals; and

a plurality of optical receivers each matched with a respective optical transmitter for receiving and detecting the demultiplexed optical communications signal.

2. A network transceiver according to Claim 1, wherein said optical receiver comprises a PIN detector.

3. A network transceiver according to Claim 2, wherein said PIN detector comprises an InGaAS PIN detector.

4. A network transceiver according to Claim 2, wherein said optical receiver further comprises a transimpedance amplifier.

5. A network transceiver according to Claim 1, wherein said optical receiver comprises an Avalanche Photo Diode (APD).

6. A network transceiver according to Claim 4, wherein said APD comprises an InGaAS APD detector.

7. A network transceiver according to Claim 1, wherein said optical transmitter comprises a distributed feedback laser.

8. A network transceiver according to Claim 7, wherein said optical transmitter comprises a thermoelectric cooler and controller circuit.

9. A network transceiver according to Claim 1, and further comprising an attenuator positioned within a transmit signal channel between each optical transmitter and said multiplexer.

10. A network transceiver according to Claim 9, and further comprising a single mode optical fiber defining a signal channel between said attenuator and said optical transmitter and an optical fiber defining signal channel between said attenuator and said multiplexer.

11. A network transceiver according to Claim 1, and further comprising a transceiver electrically connected to each optical transmitter and matched optical receiver for receiving and transmitting an optical communications signal, wherein said transceiver is operative at a first wavelength band and

said optical transmitter and matched optical receiver are operative at a second wavelength band.

12. A network transceiver according to Claim 11, wherein said second wavelength band is upconverted from said first wavelength band.

13. A network transceiver according to Claim 1, and further comprising a physical sublayer chip circuit operatively connected to a plurality of optical transmitters and matched optical receivers.

14. A network transceiver according to Claim 13, and further comprising an electrical interface operatively connected to said physical sublayer chip circuit.

15. A network transceiver according to Claim 14, wherein said electrical interface comprises a plurality of RJ-45 jacks for Ethernet 1000 Base-T connection.

16. A network transceiver according to Claim 1, and further comprising a serial/deserializer (SERDES) circuit operatively connected to an optical transmitter and matched optical receiver, a switch circuit operatively connected to said serial/deserializer circuit, and a physical sublayer chip circuit and electrical interface operatively connected to said switch circuit.

17. A network transceiver for processing optical communications signals into a wavelength division multiplexed optical communications signal comprising:

a plurality of transceivers for receiving and transmitting optical communications signals contained at a first wavelength band and processing the optical communications signals as electrical signals;

an optical transmitter operatively connected to each transceiver for receiving the electrical signals from the transceiver and transmitting an optical communications signal at a second wavelength band;

a wavelength division multiplexer operatively connected to the optical transmitters for wavelength division multiplexing the optical communications signals within the second wavelength band onto a multimode fiber output;

a demultiplexer for receiving wavelength division multiplexed optical signals within the second wavelength band and demultiplexing the optical communications signals into demultiplexed optical communications signals; and

an optical receiver operatively connected to the demultiplexer and each respective transceiver for receiving and detecting a demultiplexed optical communications signal and generating a signal to a respective transceiver to be output as an optical communications signal contained within the first wavelength band.

18. A network transceiver according to Claim 17, wherein said optical receiver comprises a PIN detector.

19. A network transceiver according to Claim 18, wherein said PIN detector comprises an InGaAS PIN detector.

20. A network transceiver according to Claim 18, wherein said optical receiver further comprises a transimpedance amplifier.

21. A network transceiver according to Claim 17, wherein said optical receiver comprises an Avalanche Photo Diode (APD).

22. A network transceiver according to Claim 21, wherein said APD comprises an InGaAS APD detector.

23. A network transceiver according to Claim 17, wherein said optical transmitter comprises a distributed feedback laser.

24. A network transceiver according to Claim 17, wherein said optical transmitter comprises a thermoelectric cooler and controller circuit.

25. An network transceiver according to Claim 17, wherein each transmitter is operative for transmitting the optical communications signal contained within a second wavelength band onto a single mode fiber output.

26. A network transceiver according to Claim 17, and further comprising a single mode optical fiber defining a signal channel between said attenuator and said optical transmitter and an optical fiber defining a signal channel between said attenuator and said wavelength division multiplexer.

27. A network transceiver according to Claim 17, wherein said second wavelength band is upconverted from said first wavelength band.

28. A network transceiver according to Claim 17, wherein a wavelength channel spacing is less than about 1,000 gigahertz.

29. A multiport network hub comprising:

a plurality of transceiver boards, each having a network interface for connection to a network, a switch circuit operatively connected to the network interface, at least one optical transmitter for receiving signals from a network via the network interface and transmitting optical communications signals, at least one optical receiver matched with the at least one optical transmitter for receiving and detecting an optical communications signal and generating a signal to the network via the network interface, and a processor operatively connected to said switch circuit for controlling same;

a bus interconnecting each processor;

a wavelength division multiplexer operatively connected to each optical transmitter for multiplexing the optical communications signals into a multimode wavelength division multiplexed optical communications signal; and

a demultiplexer operatively connected to each optical receiver for receiving and demultiplexing multimode wavelength division multiplexed optical communications signal into a plurality of demultiplexed optical communications signals.

30. A multiport network hub according to Claim 29, wherein said optical receiver comprises a PIN detector.

31. A multiport network hub according to Claim 30, wherein said PIN detector comprises an InGaAS PIN detector.

32. A multiport network hub according to Claim 29, wherein said optical receiver comprises an Avalanche Photo Diode (APD).

33. A multiport network hub according to Claim 32, wherein said APD comprises an InGaAS detector.

34. A multiport network hub according to Claim 30, wherein said optical receiver further comprises a transimpedance amplifier.

35. A multiport network hub according to Claim 29, wherein said optical transmitter comprises a distributed feedback laser.

36. A multiport network hub according to Claim 29, wherein said optical transmitter comprises a thermoelectric cooler and controller circuit.

37. A multiport network hub according to Claim 29, wherein said network interface is operative with an Ethernet infrastructure.

38. A multiport network hub according to Claim 37, wherein said network interface comprises a plurality of RJ-45 jacks.

39. A multiport network hub according to Claim 29, and further comprising a serial/deserializer (SERDES) interface circuit operatively connected between each of an optical transmitter and matched optical receiver and the switch circuit.

40. A multiport network hub according to Claim 29, wherein said network interface further comprises octal physical sublayer chip circuits.

41. A multiport network hub according to Claim 29, wherein a channel spacing is less than about 1,000 gigahertz.

42. A method of expanding the bandwidth of an existing optical communications network comprising the steps of:

transmitting optical communications signals from a plurality of optical transmitters positioned along respective signal channels;

multiplexing the optical communications signals into a multimode wavelength division multiplexed optical communications signal having a channel spacing less than about 1,000 gigzhertz;

demultiplexing a multimode wavelength division multiplexed optical communications signal within a demultiplexer into a plurality of optical communications signals along respective signal channels; and

receiving and detecting the plurality of optical communications signals within optical receivers that are respectively matched with optical transmitters.

43. A method according to Claim 42, wherein the step of detecting is within a PIN detector.

44. A method according to Claim 43, wherein the PIN detector comprises an InGaAS detector.

45. A method according to Claim 42, wherein the step of transmitting comprises the step of generating an optical communications signal with a distributed feedback laser.